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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/802,639	03/16/2004	Matthew J. Carey	HSJ920040056US1	4918
44425	7590	07/25/2006	EXAMINER	
THOMAS R. BERTHOLD 18938 CONGRESS JUNCTION COURT SARATOGA, CA 95070			KLIMOWICZ, WILLIAM JOSEPH	
			ART UNIT	PAPER NUMBER
			2627	
DATE MAILED: 07/25/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/802,639	CAREY ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	William J. Klimowicz	2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-41 is/are allowed.
- 6) ☐ Claim(s) \_\_\_\_ is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 March 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. ____.  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____.  | 6) <input type="checkbox"/> Other: ____.                                    |

## DETAILED ACTION

### *Ex Parte Quayle*

This application is in condition for allowance except for the following formal matters:

### *Drawings*

Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).

The drawings are objected to because the left-side designator **100** adjacent the bracket, and referencing the layers **148** through **130**, inclusive, should be designated as **101**, in accordance with the Applicants' specification.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will

be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

The disclosure is objected to because of the following informalities:

With regard to page 8, line 22, the designator 245 should be changed to the designator 244.

Appropriate correction is required.

### ***Claim Objections***

Claim 31 is objected to because of the following informalities:

It appears that claim 31 should depend from claim 30, and not claim 23. Appropriate correction and/or comments are required.

### ***Reasons for Allowance***

The following is an Examiner's statement of reasons for allowance:

The prior art of record fails to fairly, teach, show or suggest, by either anticipating or rendering obvious, the invention as set forth in the claims of the instant application.

Furthermore, a search made does not detect the combined claimed elements as set forth in the pending claims. Additionally, the reasons for allowance of the claims over the prior art of record is believed to be readily clear, self evident and apparent from the claim language set forth in each of claims 1, 13 and 28, when compared and contrasted with the prior art.

More particularly, the instant invention (as set forth in broadest independent claim 1) provides for a magnetically-coupled structure in a magnetic device of the type having a substrate and a plurality of ferromagnetic layers, the structure being formed on the substrate and includes: a first ferromagnetic layer having an in-plane magnetization direction oriented in a first direction; a second ferromagnetic layer magnetically-coupled to the first ferromagnetic layer and having an in-plane magnetization direction oriented substantially orthogonal to said first direction in the absence of an applied magnetic field; and an electrically-conducting spacer layer between the first and second ferromagnetic layers, the spacer layer inducing substantial orthogonal magnetic coupling of the second ferromagnetic layer to the first ferromagnetic layer.

The closest *prior art* includes Yuasa et al. (US 6,710,984 B1) who discloses a magnetically-coupled structure (e.g., FIG. 8) in a magnetic device of the type having a substrate (47) and a plurality of ferromagnetic layers (FIG. 8), the structure being formed on the substrate (47) and comprising: a first ferromagnetic layer (67) having an in-plane magnetization direction oriented in a first direction (left-to-right); a second ferromagnetic layer (71) magnetically-coupled to the first ferromagnetic layer (67) and having an in-plane magnetization direction (into plane of paper in FIG. 8) oriented substantially orthogonal to said first direction in the absence of an applied magnetic field. The magnetic coupling layer used by Yuasa et al. (US 6,710,984 B1), however, is expressly disclosed as a non-conductive oxide material, and not an electrically-conducting spacer layer between the first and second ferromagnetic layers, as set forth in the claimed invention, wherein the spacer layer induces substantial orthogonal magnetic coupling of the second ferromagnetic layer to the first ferromagnetic layer.

Thus, Yuasa et al. (US 6,710,984 B1) does not teach, show or suggest, the claimed invention, as set forth in claims 1, 13 and 28 of the instantly claimed invention.

Additionally, Yuasa et al. (US 6,710,984 B1) does not disclose the invention as set forth in the manner, function and relationship relative to other claimed structure as prescribed by the independent claims 1, 13 and 28.

Moreover, Yuasa et al. (US 6,710,984 B1) does not provide, alone or in combination with the art of record or general knowledge within the art, any suggestion or teaching for the invention as set forth in the independent claims 1, 13 and 28.

### ***Conclusion***

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

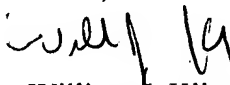
A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to William J. Klimowicz whose telephone number is (571) 272-7577. The examiner can normally be reached on Monday-Thursday (6:30AM-5:00PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hoa Thi Nguyen can be reached on (571) 272-7579. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2627

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
William J. Klimpewicz  
Primary Examiner  
Art Unit 2627

WJK